

Rural Pipe

Product Catalogue

Version 1.05





Established in 1954, Waters & Farr is a leading New Zealand manufacturer of high performance polyethylene and polypropylene pipe for civil, utilities and rural applications.

Overview

Manufacturing and distribution sites in Whanganui and Rangiora, supported by an additional distribution centre in Auckland, ensure timely product supply to customers throughout New Zealand.

Waters & Farr products are distributed to installers and asset owners through a nationwide network of merchant stockists servicing the civil, utilities and rural sectors.

Waters & Farr is committed to continuous improvement. Ongoing investment in plant and equipment is focussed on meeting customer needs and delivering innovative solutions. Our comprehensive range of polyethylene and polypropylene pipe extends from 13mm to 1200mm in diameter.

Commitment to quality

- Waters & Farr maintains a quality management system certification to ISO 9001
- 'S' mark certification to AS/NZS 4130 and AS/NZS 5065 is maintained via independent third party verification.
- PipeTest NZ, a division of Waters & Farr, was established as an independent IANZ accredited testing laboratory. PipeTest NZ conducts a comprehensive range of pipe and fusion joint testing on pipeline products for Waters & Farr and external parties.
- Waters & Farr operates under founding values that underpin our business practices in order to deliver positive outcomes for our people and our customers.

How To Find Us

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DEFINITIONS

SDR

Standard Dimension Ratio - a nominal ratio of the plain wall pipe outside diameter to its wall thickness

DN

Nominal size:

- Metric pipes - Minimum Outside Diameter (OD) at 20°C in mm
- LDPE and FarmBoss® pipes – Nominal Inside Diameter in mm

SN

Nominal Pipe Stiffness expressed in KN/m/m

PN

Nominal working internal pressure at 20°C for a water conveying pipe expressed in bar.

PE and PP

- PE - Polyethylene
- PE 100 and base resins used for its manufacture
- LDPE - Low Density Polyethylene
- PP - Polypropylene

PRESSURE RATING

PIPES TO AS/NZS 4130, SERIES

TABLE 1

PN	Nominal Working Pressure for Water at 20°C					
	SDR	MPa	kPa	bar	p.s.i.	mph
3.2	-	0.32	320	3.2	46	32
4	SDR 41	0.40	400	4.0	58	40
6.3	SDR 26	0.63	630	6.3	91	63
8	SDR 21	0.80	800	8.0	116	80
10	SDR 17	1.00	1000	10.0	145	100
12.5	SDR 13.6	1.25	1250	12.5	181	125
16	SDR 11	1.60	1600	16.0	232	160
20	SDR 9	2.00	2000	20.0	290	200
25	SDR 7.4	2.50	2500	25.0	362	250

FEATURES AND BENEFITS

▪ Comprehensive

The FarmFlow range offers pressure and irrigation pipes of various pressure ratings, diameters and lengths that fully meet livestock, cropping and orchardist needs.

▪ Durable

Correctly designed, installed and operated, buried FarmFlow pipe can be expected to offer reliable service in excess of 100 years and is resistant to a large range of agricultural chemicals and active bloat treatments.

▪ High Quality

FarmFlow metric pipe is manufactured in accordance with AS/NZS4130 under a quality system accredited to ISO 9001.

▪ Flexible

FarmFlow pipes are lightweight, strong and flexible and are suitable for installation by trenching, ploughing and directional drilling.

▪ Versatile

FarmFlow allows the farm owner and designer to combine pipe pressure and diameters to create the most effective and low cost water distribution system.

▪ Efficient

FarmFlow metric pipes are made of PE100, which compared to MDPE allows for thinner wall thickness and increased flow in relation to diameter.

DIMENSIONS

POLYETHYLENE PIPES TO AS/NZS 4130 SERIES 1

TABLE 2

DN	Pipe OD (mm)		SDR 21		SDR17		SDR13.6		SDR11	
	Min	Max	Average wall thickness (mm)	Average ID (mm)	Average wall thickness (mm)	Average ID (mm)	Average wall thickness (mm)	Average ID (mm)	Average wall thickness (mm)	Average ID (mm)
25	25.0	25.3	-	-	1.8	21.7	2.1	21.1	2.5	20.2
32	32.0	32.3	1.8	28.7	2.1	28.1	2.6	27.0	3.1	26.0
40	40.0	40.4	2.1	36.1	2.6	35.0	3.2	33.8	4.0	32.3
50	50.0	50.5	2.6	45.1	3.2	43.9	4.0	42.4	4.9	40.4
63	63.0	63.6	3.2	56.9	4.1	55.2	5.0	53.3	6.2	51.0
75	75.0	75.7	3.9	67.7	4.8	65.8	5.9	63.7	7.2	61.0
90	90.0	90.9	4.6	81.3	5.8	79.0	7.0	76.5	8.7	73.1
110	110.0	111.0	5.7	99.2	7.0	96.5	8.6	93.3	10.6	89.4
125	125.0	126.2	6.4	112.9	7.9	109.9	9.8	106.1	12.1	101.5
140	140.0	141.3	7.1	126.5	8.8	123.1	10.9	118.9	13.4	113.9
160	160.0	161.5	8.2	144.5	10.1	140.7	12.5	135.9	15.4	130.0
180	180.0	181.7	9.1	163.1	11.3	158.3	14.1	152.8	17.3	146.3
200	200.0	201.8	10.2	180.6	12.6	175.8	15.5	170.1	19.2	162.5
225	225.0	227.1	11.4	203.3	14.2	197.8	17.5	191.1	21.6	182.9
250	250.0	252.3	12.6	226.1	15.6	220.0	19.4	212.4	23.9	203.4
280	280.0	282.6	14.2	253.0	17.5	246.3	21.7	237.9	26.8	227.8
315	315.0	317.9	15.8	284.9	19.7	276.6	24.5	267.6	30.1	256.3
355	355.0	358.2	17.8	321.0	22.3	312.1	27.5	301.6	33.9	288.8
400	400.0	403.6	20.2	361.5	25.0	351.9	31.0	339.9	38.2	325.4
450	450.0	454.1	22.7	406.8	28.1	395.9	34.9	382.4	43.0	366.1
500	500.0	504.5	25.2	452.0	31.2	440.0	38.7	424.9	47.8	406.8
560	560.0	565.0	28.1	506.4	35.0	492.7	43.4	475.9	53.4	455.8
630	630.0	635.7	31.6	569.8	39.3	554.4	48.7	535.5	60.2	512.6
710	710.0	716.4	35.7	641.9	44.3	624.6	54.9	603.4	67.8	577.6
800	800.0	807.2	40.1	723.4	49.9	703.9	61.8	680.0	76.3	651.0
900	900.0	908.1	45.1	813.9	56.3	791.7	69.6	764.9	85.9	732.4
1000	1000.0	1009.0	50.2	904.2	62.4	879.8	76.2	852.1	95.4	813.7
1200	1200.0	1210.0	60.2	1084.7	74.2	1057.2	92.7	1020.0	-	-



FARMFLOW RURAL PIPE

FarmFlow® Greenstripe

FARMFLOW GREENSTRIPE PIPE TO AS/NZS 4130 SERIES 1 PN8 (8 BAR AT 20°C) SDR 21 PE100

Item Code	DN (OD)	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		50	100	200		
RH32.21...GRN	32	✓	✓	✓	1.8	28.6
RH40.21...GRN	40	✓	✓	✓	2.1	36.1
RH50.21...GRN	50	✓	✓	✓	2.6	45.0
RH63.21...GRN	63	✓	✓	✓	3.2	56.9

* Full product code includes pipe length. Example: RH32.21 pipe in 100m length – code: RH32.21.100GRN
MTO = Made to Order

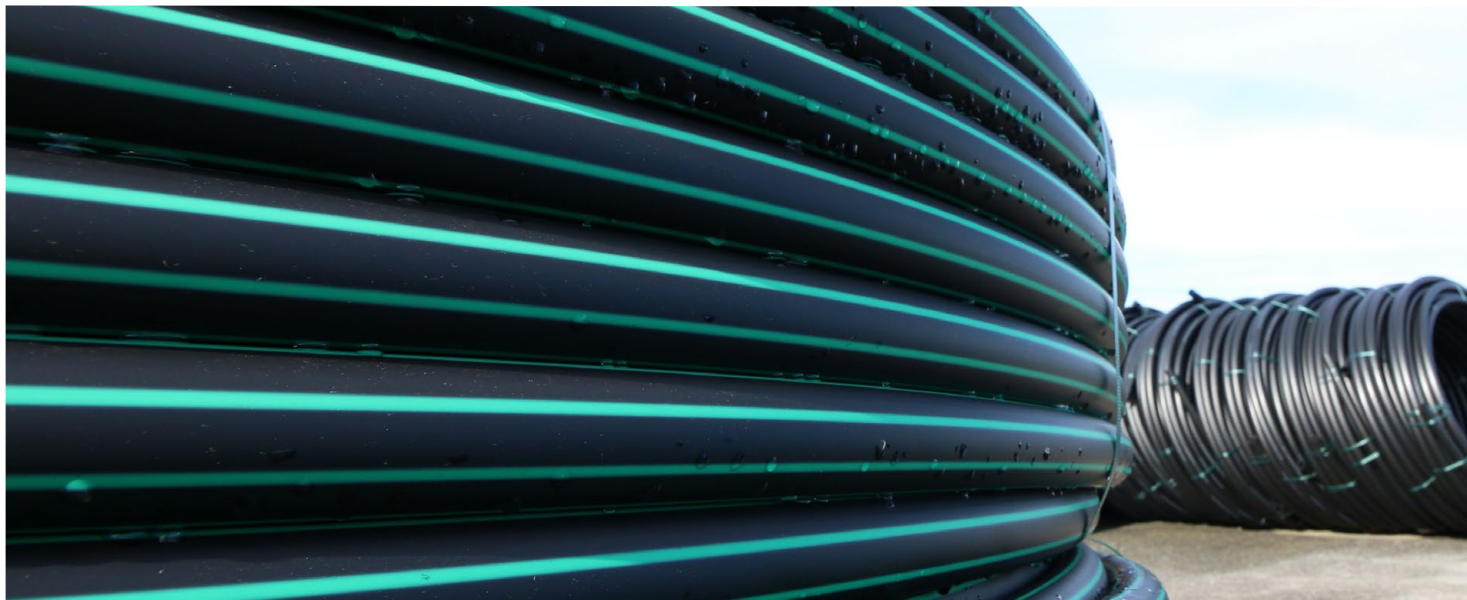
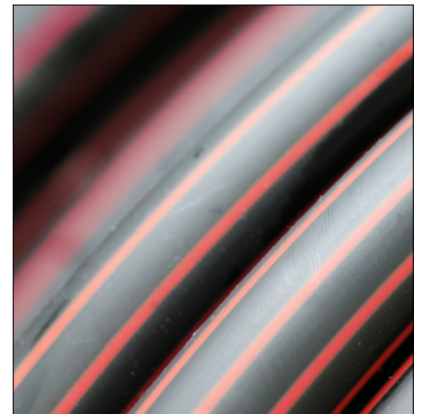


FarmFlow® Redstripe

FARMFLOW REDSTRIPE PIPE TO AS/NZS 4130 SERIES 1 PN10 (10 BAR AT 20°C) SDR 17 PE100

Item Code	DN (OD)	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		50	100	200		
RH25.17...RED	25	✓	✓	✓	1.8	21.6
RH32.17...RED	32	✓	✓	✓	2.1	28.0
RH40.17...RED	40	✓	✓	✓	2.6	35.0
RH50.17...RED	50	✓	✓	✓	3.2	43.8
RH63.17...RED	63	✓	✓	✓	4.1	55.2
RH75.17...RED	75	MTO	MTO		4.8	65.7

* Full product code includes pipe length. Example: RH32.17 pipe in 100m length – code: RH32.17.100RED
MTO = Made to Order



FarmFlow® Purplestripe

FARMFLOW EFFLUENT PURPLESTRIPE PIPE TO AS/NZS 4130 SERIES 1 PN8 (8 BAR AT 20°C) SDR 21 PE100

Item Code	DN (OD)	Length in Meters		Av. Wall (mm)	Av. ID (mm)
		50	100		
RH63.21_PUR	63	✓	✓	3.2	56.9
RH75.21_PUR	75	✓	✓	3.9	67.6
RH90.21_PUR	90	✓	✓	4.6	81.2

*Full product code includes pipe length. Example: RH75.21...PUR pipe in 100m length – code: RH75.21.100PUR
MTO = Made to Order

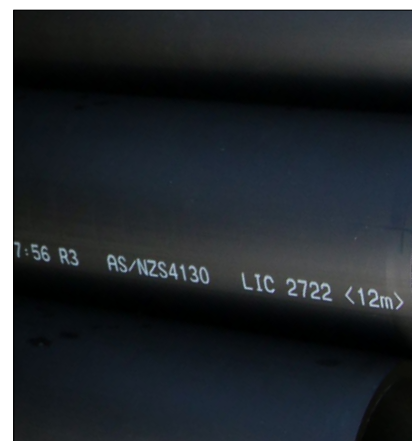


FarmFlow® Blackstripe

FARMFLOW BLACK PIPE TO AS/NZS 4130 SERIES 1 PN12.5 (12.5 BAR AT 20°C) SDR13.6 PE100

Item Code	DN (OD)	Stocked Lengths (m)				Av. Wall (mm)	Av. ID (mm)
		6	50	100	200		
RH25.13	25	✓	✓	✓	MTO	2.0	21.0
RH32.13	32	✓	MTO	✓	✓	2.6	26.9
RH40.13	40	✓	MTO	✓	✓	3.2	33.8
RH50.13	50	✓	MTO	✓	✓	3.9	42.3
RH63.13	63	✓	MTO	✓	✓	5.0	53.3

*Full product code includes pipe length. Example: RH32.13 pipe in 100m length – code: RH32.13.100
MTO = Made to Order



Farmflow is a high performance metric pressure pipe ideally suited to rural water reticulation needs.



PIPES - RURAL FARMFLOW LDPE

LOW DENSITY POLYETHYLENE (LDPE) PRESSURE PIPE IS IDEAL FOR WATER RETICULATION, TROUGH CONNECTIONS OR RURAL SYSTEMS

Waters & Farr FarmFlow LDPE pressure pipe provides a higher pressure rating than required under NZS7601 and is suitable for use with active bloat treatments. It is tough and kink resistant, long lasting and resistant to water pressure surges. Long coil lengths require less jointing, so are easy to install.

Pipes are checked dimensionally to ensure ease of jointing with any LDPE sized fitting.

FARMFLOW LDPE PRESSURE PIPE

Item Code	DN (ID)	Stocked Lengths (m)				Av. Wall (mm)	Av. ID (mm)	Working Pressure at 20°C (kPa)
		25	50	100	200			
LD15*	15	✓	✓	✓	✓	2.3	12.6	970
LD20*	20	✓	✓	✓	✓	3.1	18.3	900
LD25*	25	✓	✓	✓	✓	3.1	24.6	800
LD32*	32	✓	✓	✓	✓	3.3	30.5	650
LD40*	40	✓	✓	✓	✓	3.3	36.8	600
LD50*	50	✓	✓	✓	MTO	3.3	49.5	500

*Full product code includes pipe length. Example: LD25 pipe in 100m length – code: LD25.100
MTO = Made to Order



FARMFLOW HiPOL LATERAL TUBE

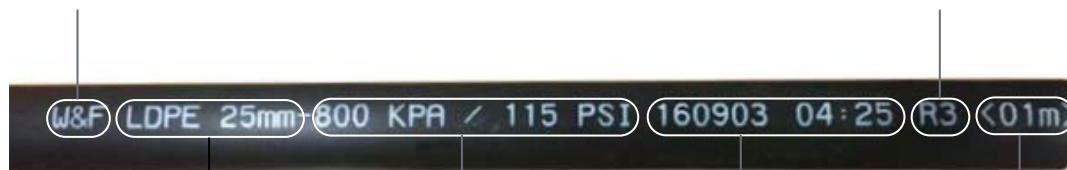
Item Code	DN (ID)	Stocked Lengths (m)				Av. Wall (mm)	Av. ID (mm)	Working Pressure at 20°C (kPa)
		25	50	100	200			
LD13...HIPOL*	25	✓	✓	✓	✓	1.2	12.9	500
LD16...HIPOL*	25	✓	✓	✓	✓	1.2	16.0	500
LD19...HIPOL*	25	✓	✓	✓	✓	1.3	19.1	500
LD25...HIPOL*	25	✓	✓	✓	✓	1.8	25.4	500

*Full product code includes pipe length. Example: LD25...HIPOL pipe in 100m length – code: LD25.100HIPOL
MTO = Made to Order



Waters & Farr Ltd

Machine Number & Plant



Type & Size

Pressure Rating at 20°C

Date (YY/MM/DD) & Time

Metre Mark

FARMBOSS®

FARMBOSS® IS A TWIN WALL DRAINAGE PIPE WITH A SMOOTH INTERNAL BORE AND A CORRUGATED LOAD BEARING EXTERIOR WALL.

FarmBoss® is the answer for virtually any rural drainage application, including:

- Farm and forestry culverts
- Dairy shed runoffs
- Field drainage
- Stream diversion

DURABILITY

FARMBOSS® pipe is manufactured from Polyethylene or Polypropylene, which have high load bearing capability, resistance to impact, abrasion, chemical attack, and has a high level of UV stability.

RANGE OF SIZES

FARMBOSS® is available in sizes DN225 up to DN2500; note all FARMBOSS® sizing is based on nominal internal diameter.

EASE OF TRANSPORT AND HANDLING

FARMBOSS® is very light weight due to its twin walled construction, so FARMBOSS® can be handled without heavy lifting equipment and can be transported on typical farm vehicles. FARMBOSS® is much easier to handle on slopes or where accessibility of heavy equipment is an issue.

HYDRAULIC EFFICIENCY

FARMBOSS® incorporates a smooth internal bore so has excellent flow characteristics.

EASE OF JOINTING

FARMBOSS® can be easily assembled using incorporated sockets or separate couplers, joints are typically pushed together, but can be sealed if required with sealing rings.



FARMBOSS® UV RESISTANT POLYETHYLENE OR POLYPROPYLENE TWIN WALL DRAINAGE PIPE.

W&F Code	Description	Nominal Internal Diameter (DN)	Typical Outside Diameter (mm)	Typical Effective Length (m)	Stiffness Class (SN)	Stocked/ MTO
BP225RB	DN225 ID FARMBOSS SN6 PE100 TWP 6M	225	259	6	6	Stocked
BP225R	DN225 FARMBOSS PIPE RING					
BP300RB	DN300 ID FARMBOSS SN6 PE100 TWP 6M	300	353	6	6	Stocked
BP300R	DN300 FARMBOSS PIPE RING					
BP375RB	DN375 ID FARMBOSS SN6 PE100 TWP 6M	375	442	6	6	Stocked
BP375R	DN375 FARMBOSS PIPE RING					
BP450RB	DN450 ID FARMBOSS SN6 PE100 TWP 6M	450	531	6	6	Stocked
BP450R	DN450 FARMBOSS PIPE RING					
BP500RB	DN500 ID FARMBOSS SN4 PE100 TWP 5.8M	500	574	5.8	4	Stocked
BP500R	DN500 FARMBOSS PIPE RING					
BP600RB	DN600 ID FARMBOSS SN4 PE100 TWP 5.8M	600	674	5.8	4	Stocked
BP600R	DN600 FARMBOSS PIPE RING					
BP700RB	DN700 ID FARMBOSS SN4 PE100 TWP 5.8M	700	774	5.8	4	Stocked
BP700R	DN700R FARMBOSS PIPE RING					
BP800RB	DN800 ID FARMBOSS SN4 PE100 TWP 5.8M	800	894	5.8	4	Stocked
BP800R	DN800R FARMBOSS PIPE RING					
BP900RB	DN900 ID FARMBOSS SN4 PE100 TWP 5.8M	900	1020	5.8	4	Stocked
BP900R	DN900R FARMBOSS PIPE RING					
BP1000RB	DN1000 ID FARMBOSS SN4 PE100 TWP 5.8M	1000	1120	5.8	4	Stocked
BP1000R	DN1000R FARMBOSS PIPE RING					
BP1100RB	DN1100 ID FARMBOSS SN4 PE100 TWP 5.8M	1100	1226	5.8	4	MTO
BP1100R	DN1100R FARMBOSS PIPE RING					
BP1200RB	DN1200 ID FARMBOSS SN4 PE100 TWP 5.8M	1200	1366	5.8	4	MTO
BP1200R	DN1200 ID FARMBOSS PIPE RING					
BP1400RB	DN1400 ID FARMBOSS SN4 PE100 TWP 5.8M	1400	1582	5.8	4	MTO
BP1400R	DN1400 ID FARMBOSS PIPE RING					
BP1500RB	DN1500 ID FARMBOSS SN4 PE100 TWP 5.8M	1500	1690	5.8	4	MTO
BP1500R	DN1500 ID FARMBOSS PIPE RING					
BP1660RB	DN1660 ID FARMBOSS SN4 PE100 TWP 5.8M	1660	1874	5.8	4	MTO
BP1660R	DN1660 ID FARMBOSS PIPE RING					
BP1800RB	DN1800 ID FARMBOSS SN4 PE100 TWP 5.8M	1800	2000	5.8	4	MTO
BP1800R	DN1800 ID FARMBOSS PIPE RING					
BP2000RB	DN2000 ID FARMBOSS SN4 PE100 TWP 5.8M	2000	2218	5.8	4	MTO
BP2000R	DN2000 ID FARMBOSS PIPE RING					
BP2500RB	DN2500 ID FARMBOSS SN4 PE100 TWP 5.8M	2500	2794	5.8	4	MTO
BP2500R	DN2500 ID FARMBOSS PIPE RING					

*Rings sold separately, sizes DN500-DN2500 require 2 rings per pipe

MTO = Made to Order



INSTALLATION

INSTALLATION GUIDELINES

Installation practices for buried flexible pipelines are in AS/NZS 2033 and AS/NZS 2566.2 (AS/NZS 2566.1 provides guidelines for structural design). Recommended by the standard minimum dimensions of embedment zone and of the trench are detailed in the tables below, so as a general guideline:

FARBOSS®: RECOMMENDED MINIMUM TRENCH WIDTH (B)

- DN 225: 0.56 m
- DN 300: 0.75 m
- DN 375: 0.84 m
- DN 450: 1.13 m
- DN 500: 1.17 m
- DN 600: 1.27 m
- DN 700: 1.37 m
- DN 800: 1.49 m
- DN 900: 1.69 m
- DN 1000: 1.82 m
- DN 1100: 1.93 m
- DN 1200: 2.07 m
- DN 1400: 2.37 m
- DN 1500: 2.55 m
- DN 1600: 2.81 m
- DN 1800: 3.00 m
- DN 2000: 3.33 m
- DN 2500: 4.19 m

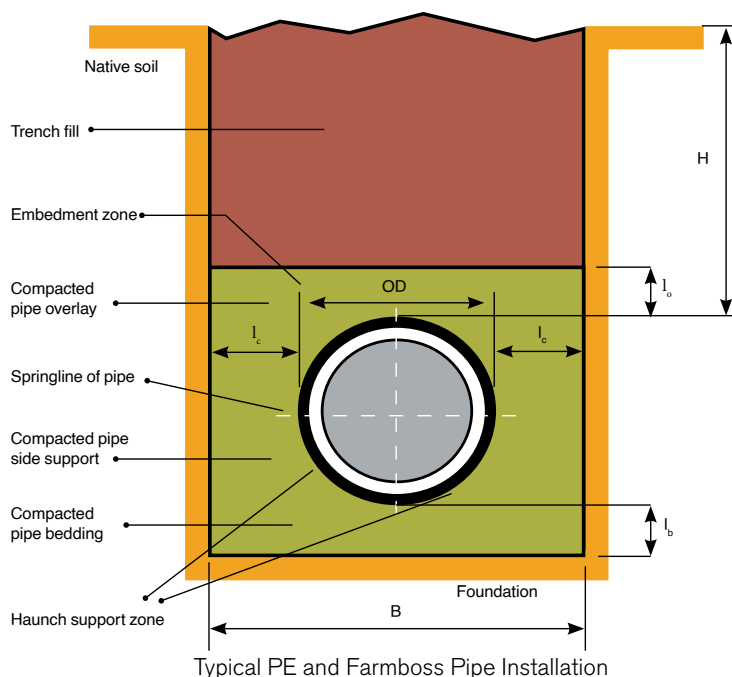
EMBEDMENT MATERIAL

The embedment of buried flexible pipes in normal soil should be of granular compactible material, free from rocks and other hard or sharp objects, with the maximum particle size of 20 mm, preferably in the particle size range of 14 mm, and free from organic material that can affect pipe performance.

To ensure good support to the bedding, side supports are constructed compacting the embedment material in layers of not more than 150 mm, or half the pipe diameter, whichever is greater.

EMBEDMENT GEOMETRY

TYPICAL PE AND FARBOSS PIPE TRENCH



Typical PE and Farmboss Pipe Installation

OD	Recommended Minimum Values			
	l_b	l_c	l_o	
≥75	≤150	75	100	100
>150	≤300	100	150	150
>300	≤450	100	200	150
>450	≤900	150	300	150
>900	≤1500	150	350	200
>1500	≤4000	150	0.25xOD	300

Note: Dimensions in mm.

Recommended Minimum Cover (H)	
Loading condition	Minimum cover H (m) *
Installed in paddocks and not subject to traffic loads	0.30
Installed where subject to light traffic and stock movement	0.45
Installed in areas used for horticulture or subject to tillage or similar	0.60
Installed under unsealed farm roads and raceways	0.75

Maximum cover varies with soil type.
In firm clay soil it is not recommended to install Farmboss at a depth over 6 metres.

Note: *Subject to design to AS/NZS 2566.1 and to variation by the relevant asset owner. Railway crossing shall comply with AS 4799 and relevant NZ Railroads' regulations.

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